Two Way Streaming in Typescript

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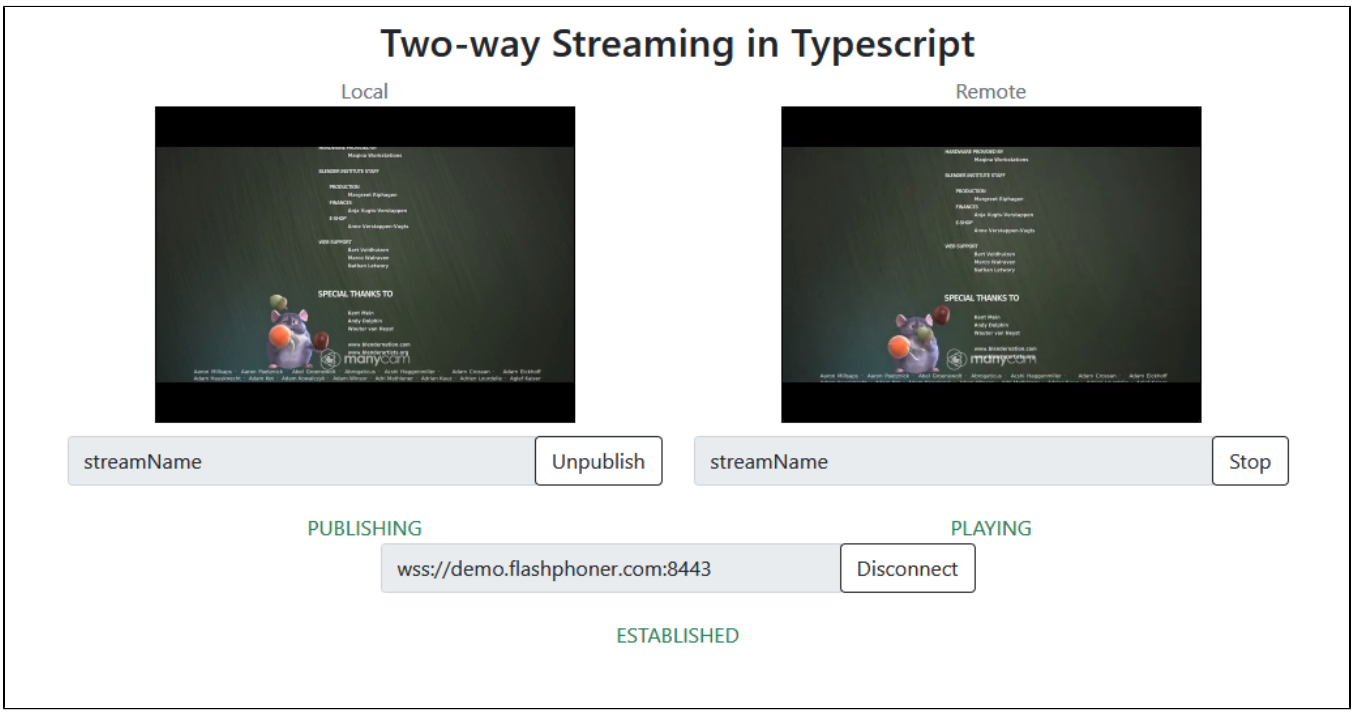
Overview

Two Way Streaming in Typescript application shows how to use Web SDK in React application written in Typescript to publish and play WebRTC stream



The project is available on GitHub, and inWeb SDK build archivessince build 2.0.203 by the following path examples/typescript/two-way-streaming-ts.

Building the project

1. Download WebSDK source code

```
git clone https://github.com/flashphoner/flashphoner_client.git
```

2. Go to the example folder

```
cd flashphoner_client/examples/typescript/two-way-streaming-ts
```

3. Install dependencies

```
npm install
```

4. Build for local testing

```
npm start
```

or to deploy to your web server

```
npm run build
```

Analyzing example code

To analyze the code take version with hash d9abaca which is available here and in Web SDK build 2.0.203

Application code is in TwoWayStreamingApp.tsxfile, additional functions are in fp-utils.ts file

1. API import

code

```
import * as FPUtils from './fp-utils';
import * as Flashphoner from '@flashphoner/websdk';
```

2. API initialization

Flashphoner.init() code

```
componentDidMount() {
  try {
    Flashphoner.init({});
    ...
  }
  catch(e) {
    console.log(e);
    ...
  }
}
```

3. Connecting to the server and receving the event confirming connection is established successfully

Flashphoner.createSession(), SESSION_STATUS.ESTABLISHED code

```
onConnectClick = () => {
  let app = this;
  let url = this.state.serverUrl;
  let session = this.state.session;

  if (!session) {
    console.log("Create new session with url " + url);
    app.setState({connectButtonDisabled: true, serverUrlDisabled: true});
    Flashphoner.createSession({urlServer: url}).on(SESSION_STATUS.ESTABLISHED, (session) => {
      app.setState({sessionStatus: SESSION_STATUS.ESTABLISHED, sessionStatusClass: 'text-success'});
      app.onConnected(session);
    }).on(SESSION_STATUS.DISCONNECTED, () => {
      ...
    }).on(SESSION_STATUS.FAILED, () => {
      ...
    });
  }
  ...
}
```

4. Stream publishing

Session.createStream(), Stream.publish() code

```
publishStream = () => {
  let app = this;
  let session = this.state.session;
  let streamName = this.state.publishStreamName;
  let localVideo = this.state.localVideo;

  if(session && localVideo) {
    session.createStream({
      name: streamName,
      display: localVideo,
      cacheLocalResources: true,
      receiveVideo: false,
      receiveAudio: false
    }).on(STREAM_STATUS.PUBLISHING, (stream) => {
      ...
    }).on(STREAM_STATUS.UNPUBLISHED, () => {
      ...
    }).on(STREAM_STATUS.FAILED, () => {
      ...
    }).publish();
  }
}
```

5. Receiving the event confirming the stream is successfully published

STREAM_STATUS.PUBLISHING code

```
publishStream = () => {
  let app = this;
  let session = this.state.session;
  let streamName = this.state.publishStreamName;
  let localVideo = this.state.localVideo;

  if(session && localVideo) {
    session.createStream({
      ...
    }).on(STREAM_STATUS.PUBLISHING, (stream) => {
      app.setState({publishStatus: STREAM_STATUS.PUBLISHING, publishStatusClass: 'text-success'});
      app.onPublishing(stream);
    }).on(STREAM_STATUS.UNPUBLISHED, () => {
      ...
    }).on(STREAM_STATUS.FAILED, () => {
      ...
    }).publish();
  }
}
```

6. Stream playback with picture resizing to div size

Session.createStream(), Stream.play(), STREAM_STATUS.PENDING, FPUtils.resizeVideo() code

```
playStream = () => {
  let app = this;
  let session = this.state.session;
  let streamName = this.state.playStreamName;
  let remoteVideo = this.state.remoteVideo;

  if(session && remoteVideo) {
    session.createStream({
      name: streamName,
      display: remoteVideo
    }).on(STREAM_STATUS.PENDING, (stream) => {
      let video = document.getElementById(stream.id());
      if (!video.hasListeners) {
          video.hasListeners = true;
          video.addEventListener('resize', (event) => {
              FPUtils.resizeVideo(event.target);
          });
      }
    }).on(STREAM_STATUS.PLAYING, (stream) => {
      ...
    }).on(STREAM_STATUS.STOPPED, () => {
      ...
    }).on(STREAM_STATUS.FAILED, () => {
      ...
    }).play();
  }
}
```

7. Receiving the event confirming successful playback

STREAM_STATUS.PLAYING code

```
playStream = () => {
  let app = this;
  let session = this.state.session;
  let streamName = this.state.playStreamName;
  let remoteVideo = this.state.remoteVideo;

  if(session && remoteVideo) {
    session.createStream({
      name: streamName,
      display: remoteVideo
    }).on(STREAM_STATUS.PENDING, (stream) => {
      ...
    }).on(STREAM_STATUS.PLAYING, (stream) => {
      app.setState({playStatus: STREAM_STATUS.PLAYING, playStatusClass: 'text-success'});
      app.onPlaying(stream);
    }).on(STREAM_STATUS.STOPPED, () => {
      ...
    }).on(STREAM_STATUS.FAILED, () => {
      ...
    }).play();
  }
}
```

8. Playback stopping

Stream.stop() code

```
onPlayClick = () => {
  let app = this;
  let stream = this.state.playStream;
  ...

  if (!stream) {
    ...
    app.playStream();
  } else {
    app.setState({playButtonDisabled: true});
    stream.stop();
  }
}
```

9. Receiving the event confirming playback is stopped

STREAM_STATUS.STOPPED code

```
playStream = () => {
  let app = this;
  let session = this.state.session;
  let streamName = this.state.playStreamName;
  let remoteVideo = this.state.remoteVideo;

  if(session && remoteVideo) {
    session.createStream({
      name: streamName,
      display: remoteVideo
    }).on(STREAM_STATUS.PENDING, (stream) => {
      ...
    }).on(STREAM_STATUS.PLAYING, (stream) => {
      ...
    }).on(STREAM_STATUS.STOPPED, () => {
      app.setState({playStatus: STREAM_STATUS.STOPPED, playStatusClass: 'text-success'});
      app.onStopped();
    }).on(STREAM_STATUS.FAILED, () => {
      ...
    }).play();
  }
}
```

10. Publishing stopping

Stream.stop() code

```
onPublishClick = () => {
  let app = this;
  let stream = this.state.publishStream;
  ...
  if (!stream) {
    ...
    app.publishStream();
  } else {
    app.setState({publishButtonDisabled: true});
    stream.stop();
  }
}
```

11. Receiving the event confirming the stream is unpublished

STREAM_STATUS.UNPUBLISHED code

```
publishStream = () => {
  let app = this;
  let session = this.state.session;
  let streamName = this.state.publishStreamName;
  let localVideo = this.state.localVideo;

  if(session && localVideo) {
    session.createStream({
      ...
    }).on(STREAM_STATUS.PUBLISHING, (stream) => {
      ...
    }).on(STREAM_STATUS.UNPUBLISHED, () => {
      app.setState({publishStatus: STREAM_STATUS.UNPUBLISHED, publishStatusClass: 'text-success'});
      app.onUnpublished();
    }).on(STREAM_STATUS.FAILED, () => {
      ...
    }).publish();
  }
}
```

12. Connection closing

Session.disconnect() code

```
onConnectClick = () => {
  let app = this;
  let url = this.state.serverUrl;
  let session = this.state.session;

  if (!session) {
    ...
  } else {
    app.setState({connectButtonDisabled: true});
    session.disconnect();
  }
}
```

13. Receiving the event confirming the connection is closed

SESSION_STATUS.DISCONNECTED code

```
onConnectClick = () => {
  let app = this;
  let url = this.state.serverUrl;
  let session = this.state.session;

  if (!session) {
    ...
    Flashphoner.createSession({urlServer: url}).on(SESSION_STATUS.ESTABLISHED, (session) => {
      ...
    }).on(SESSION_STATUS.DISCONNECTED, () => {
      app.setState({sessionStatus: SESSION_STATUS.DISCONNECTED, sessionStatusClass: 'text-success'});
      app.onDisconnected();
    }).on(SESSION_STATUS.FAILED, () => {
      ...
    });
    ...
  }
}
```